THE

YORKSHIRE VISITORS' GUIDE

TO THE

GREAT EXHIBITION,

AND ALSO TO

THE PRINCIPAL SIGHTS OF LONDON.

BY THE REPORTER FOR THE "*LEEDS TIMES.*"

(With Additions and Corrections by the Author.)

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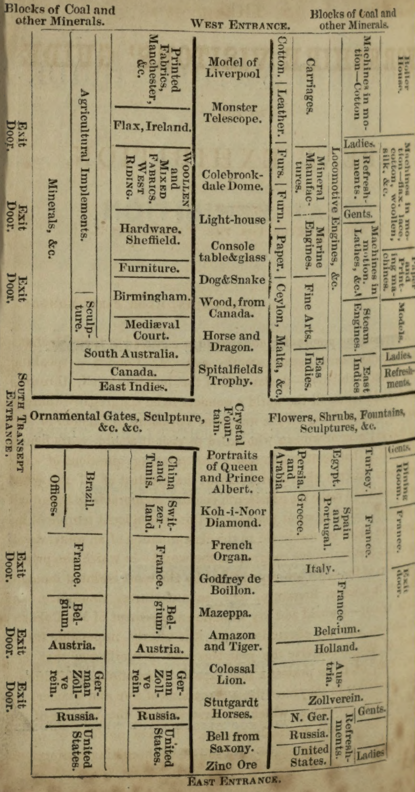
LEEDS,
AND MAY BE HAD OF ALL BOOKSELLERS AND NEWS VENDERS
IN THE WEST-RIDING.

Ground Plan of the Exhibition Building.



Crimbwell Oliver

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Robert Archer

EXHIBITION, HYDE PARK, LONDON.

Addressing the people of Huddersfield, assembled at their Mechanics' Institution *soiree*, some months ago, Mr. Cobden — speaking of the Great Exhibition—declared that the building itself, throwing out of consideration all the world's wonders to be congregated therein, was well worth walking all the way from Yorkshire to London to see; and that any man or woman who failed to visit it would, years hence, feel anything but comfortable under the quizzing questions of their then grown children when asking about the greatest of all the great events which will make the nineteenth century memorable in the annals of posterity. Having spent ten days in this magnificent temple of industry, and added my feeble aid to the dissemination of an understanding of this first real peace congress of the world—in which the principal powers of the earth are represented by the most eminent men and products in science, literature, arts, manufactures, commerce, and skilful labour—I would add my humble endorsement of Mr. Cobden's declaration, and my conviction that it is utterly impossible for the mind of man to conceive the grandeur and magnificence that here await him, or, if he possess a soul capable of emotion, to subdue and keep altogether in abeyance those sensations of awe and wonder, admiration and reverence, which the first view of the interior of this majestic temple will assuredly awaken. I have no fear of unduly raising the expectations of people who intend becoming visitors; for,

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as I hold it to be simply an impossibility for them to realize in their minds anything so grand and majestically imposing as the reality, I also hold that no man can feel disappointed or unmoved when the glories of the transept first burst upon his view.

As Englishmen we must feel proud that this great world-wide museum of industry and peace is located in our metropolis; as philanthropists we must be glad that it is so, because no other place would, perhaps, have afforded so many facilities for making so gigantic an experiment—more especially when we bear in mind that all has been done and will be successfully carried out without state aid—without abstracting a farthing from the public treasury. I believe that in articles of practical use, in finished excellence, in the skilful application of mechanical science to practical purposes, and in the perfection of workmanship, England will stand forth peerless among all other nations; whilst in those productions which depend upon the taste of the design, the grace and brilliancy of the ornaments, as well as in statuary and some other works of the fine arts, our foreign friends will unquestionably in many instances surpass us.

Suppose one of those bold plans for navigating the air had been successful, and thus given us the means of passing as we listed over the world, a grand tour of inspection into the occupations of nations made during the last six or nine months would have revealed a curious and most gratifying spectacle. One may have witnessed all over Europe, in North America, in part of South America, in the West India Islands, in the North and South of Africa, in the Scriptural East, in the East Indies, and even in a nook of China herself, in all our Australian Colonies, and in many of the islands of the Pacific, the human family, for the first time in history, preparing for one common, peaceful, enlightened, and beneficial transaction. In immense factories, in narrow workshops, in garrets and cellars, in studios, in drawing rooms and in cottages, under sheds, in mines deep in the bowels of the earth, in the open fields, on mountain sides, in wild plains, and in tangled forests—the boundless semi-deserts of South Africa, and the Himalayan chain—along winding rivers, and on the bosom of the ocean, might have been seen numbers of men and women full of thoughts of the "World's Industrial Exhibition;" and busily engaged in devising, fashioning, or gathering up, their quota towards it—all desiring to witness it, and many preparing to do so. We should everywhere have found not only how readily men entered into a sort of commercial competition and friendly rivalry of skill and ingenuity, but how promptly they took faith in the message of brotherhood, and

how heartily and proudly they laboured, as they felt themselves participating in the really glorious work.

Well, shall all this work be done for nothing?—shall all these nations and peoples have spent their strength for nought?—shall all their pains and labour be without profit and without effect?—shall the professional man, the trader, and the operative of the West-Riding reap no advantage?—shall all these glorious efforts and no less glorious results, be but a tradition and a traveller's tale to them? Surely not. I will not believe otherwise than that all parties, and classes, and callings will make any and every reasonable sacrifice to profit by the Exhibition—to look, and wonder, and question, and *learn*—aye, here they will discover the marvellous rapidity with which instruction and knowledge is conveyed by the eye and the finger—by the organs of sight and feeling. All should devote as much time for the inspection and study of the wondrous collection as their circumstances will permit. Intelligent persons will reap immense improvement whilst they are seeking the gratification of their curiosity—gaining an increase of knowledge—improvement of taste—enlargement of views, and more liberal feelings towards the great family of man. Many of the advantages of extensive travelling are brought into a focus; for a vast amount of all that is worth seeing in most parts of the world is here spread out for examination and ready comparison, highly illustrative of the science, arts, character, customs, and habits of different nations.

Following all the passages, passing along all the galleries, so as to see everything or most things exhibited, will require the visitor to travel between twenty and thirty miles; and as the greater part of his time must necessarily be occupied standing still, (in examination of what he sees) and his change of place be by a very slow progress, it is clear that many visits will be requisite in order to see the Exhibition, even though every visit be a long one. As to examining everything critically, that is wholly out of the question. Every visitor will have to make a marked distinction, not only between the frivolous and important, the mediocre and the excellent, but between what has little and what has great interest in his own eyes. Knowing that with the great mass of the population "time is money"—feeling that with a large proportion of them a long stay in London is utterly impossible—having in my own person experienced the difficulties and delays attending a first navigation of these immense labyrinths—assured of the irreparable loss of invaluable time and the non-attainment of equally invaluable information, by those who enter the Exhibition without having first laid down a settled and systematic plan of inspection, and gained, in

theory at least, some knowledge of the interior—I have determined to present the reader with what I will call

THE YORKSHIRE VISITORS' GUIDE TO THE EXHIBITION.

I have not ventured upon doing this, from any idea that I shall be alone in the field in guide-making for the public, for I hear and see right and left so many "guides" issued, issuing, and to issue, that I fear me, the result will be that Messieurs the Public will be "*guided*" until they will *not know their way*. I will do my best to make the course to be followed clear and easy of comprehension; but I cannot pretend to lay down any general rule, applicable to *all* visitors, for this plain reason, that different persons, callings, and classes, will visit the Exhibition for different objects. I think, however, as far as the West-Riding is concerned, the visitors may be divided into three great classes —those connected with textile fabrics, those engaged in machinery and hardware manufactures, and those who will go to please their senses and gratify their curiosity. However these parties may differ in their wishes in regard to an inspection of the Exhibition, there is one thing which they will all require in common—a plan of the Exhibition. This I have prepared—so far as the ground floor is concerned —my object being to enable the reader to see at a glance exactly where the principal objects, classes, and countries lie—how the different objects are disposed—and the readiest means of getting from department to department; and I would urge all who intend visiting the Exhibition to make themselves masters of the plan before starting. To do so will save them an infinity of trouble when there, and enable them to see satisfactorily and without confusion many things which they would otherwise altogether miss. The plan is reduced to the smallest size of which intelligibility would admit. It is much shorter in proportion to its width than the building itself; but that is the result of the space to which the printer is restricted in the small page over which it extends, and does not arise from want of knowledge of the true proportions. This, however, will not detract from the value of the plan as a guide.

From the plan (which will be found at the back of the title page) it will be perceived that an entire half of the building, extending from the east entrance to the transept, is devoted to the products of foreign countries; that the transepts north and south are filled with statuary, the crystal fountain, the throne and canopy placed there for the Queen's state opening, ornamental entrance gates, floriculture and bo-

ticulture, fountains, &c., &c., with refreshment stalls and "ladies" and "gents" on either side of the north end of the transept; that the remainder of the building, down to the western entrance, is occupied by British and colonial produce; and that at the outside of the building, at the west end, stand a beautiful granite column, two granite obelisks, enormous column of coal from Bangor, gigantic block of coal from Derbyshire, extraordinary slates, large admiralty anchors, &c., &c.

Turning again to the plan, it will be seen that of the four main divisions into which the productions of England and the colonies are divided, *machinery* occupies the *north* side, *raw materials and produce* and agricultural implements the *south* side, and *manufactures* and *fine arts* the *centre*. Along the central passage, to the west of the transept, a frontage upon each side of seven bays, or 168 feet, is occupied by the productions of the colonies. Adjoining the colonies and upon the north side of the passage, are placed articles included in the section of paper, printing, and bookbinding. By the side of these are placed furniture and upholstery, decorations, paper-hangings, and *papier mâché*. Manufactures in mineral substances, used for buildings or decorations, as in marble, slate, porphyries, cements, artificial stones, &c., &c., are placed next in order. Manufactures in leather, skins, furs, and hairs occupy the next position; and adjoining to them are the cottons, and printed, dyed, woven, and felted fabrics. Crossing the western extremity, and returning towards the transept by the south side of the central avenue, the first compartment is that allotted to the printed and mixed fabrics of Manchester, London and Glasgow; next to that of Irish flax, poplins, linens and other produce, and the linens, &c., of Barnsley and Knaresbro'; then the woollen, worsted, and mixed fabrics of the West-Riding; next the cutlery and hardware of Sheffield and Birmingham—separated, to some extent, by furniture, china, glass, pottery, &c.; and lastly, the Mediæval Court, Australian, Canadian, and East Indian products. Mining, quarrying, metallurgy, and mineral products are placed along the back of the southern side; and the space between them and the manufactures is occupied to a great extent by agricultural implements; whilst at the back of the north side is placed the machinery, standing and in motion. Jewellery, works of art in silver and gold, silks and velvets, lace, embroidery, shawls, and other light fancy wares, china, and glass, philosophical and musical instruments, tapestry, models in travel architecture and civil engineering, are placed, as far as practicable, in the galleries. Such are the general features of the arrangements of the British and colonial articles.

Foreign productions occupy nineteen sections to the east of the transept; and their geographical arrangement will be at once seen upon referring to the plan. Although the methodical arrangement of the British side cannot be so fully carried out in the foreign department, still everywhere each kind of produce is exhibited in such a manner that it can readily be compared with its like; so that countries and districts which manufacture particular descriptions of goods are in some degree pitted against each other. From this distribution the intelligent visitor, if he proceeds systematically, will derive many advantages, and will not fail to detect the strong and weak points in the productive power of the various countries represented. He has also thus placed before his eyes a chart of the course and impulse of trade all over the world; of the developments of which it is capable, and of the direction in which these may be most safely pointed. The limits within which competition can be profitably carried on, not only between localities, but between nations, here receive a clearer elucidation than they have ever yet had. Another general rule in the arrangement is, that raw material and produce—the least attractive portions of the display—are disposed at the sides; articles belonging to superior manufactures are brought prominently in view by being ranged all along the centre of the building—their richness and splendour of colour and form being shewn to the greatest advantage; and the effect is still further increased by the advantage of the geographical arrangement which placed the productions of the tropical regions nearest to the transept, and removed the less gaudy but more useful industry of colder regions to the east and west ends. The orderly arrangment of every contribution, and the subordination of each part and object to the idea of one great and systematic display, forces upon the mind a deep interest in that combined operation by which the Crystal Palace becomes a perfect epitome of the world's industry—a daguerreotype likeness, struck off at once—of the true "*organisation of labour.*"

I will now, for the nonce, transform myself into a guide for those of the Yorkshire visitors who intend to make a thorough examination of the entire Exhibition, and have no reason for desiring to omit paying attention to any particular class. Such persons I would advise to enter the building by

the south transept, when the full glory of the interior will burst upon their astonished vision with an almost overpowering effect.

Upon entering the south transept the first objects presented are the ornamental iron gates; then we pass on to the statuary ranged on either side, and in a few paces we find ourselves in front of the crystal fountain, the throne and canopy, with the noble elm trees, flowers, and fountains in the back-ground. Having gazed our fill at these wonders, it is important that the route most satisfactory for a visitor to take, should at once be entered upon.

After the south transept, the groups of articles belonging to the United Kingdom and the Colonies, in the western main avenue, first claim attention. Passing from the transept by turning to the left down the western main avenue, we have in the many examples of British art a very satisfactory proof that practical England cultivates still the study of the beautiful, and that the works of the hard-handed mechanic may be appropriately associated with the efforts of educated fancy to the advancement of the amenities of life. The glass fountain occupying the central place in the building shows the extent to which glass can be employed for decorative purposes, and the beauty of the material in large works. Nearly four tons of crystal or flint glass are employed in the construction of this fountain, which may be, without much difficulty, converted into a superb candelabrum. Having in the plan set down the principal objects in the central avenue, it will be unnecessary to repeat them here as we proceed down the avenue, though they should all be closely observed in passing along. Walking westward from the crystal fountain a bronze statue of the Duke of Rutland is seen, the fine Spitalfields silk trophy, the horse and dragon (an admirable specimen of mixed metal casting), the Canadian timber pile, the marble dog, the console table and glass (the largest piece of furniture ever made), crystalized alum, spermaceti, salts, potash, and soda; a specimen of Devonshire marble and its capabilities; a cross in Caen stone, an altar screen of oak, with an exquisitely-carved trophy of birds, fruits, and foliage, showing the remarkable application of steam machinery to produce involved tracery and deep undercutting; statues of Lord Eldon and his brother Lord Stowell in Carrara marble; an extraordinary church clock;

Elizabethan fountains; magnificent lighthouses; high-pressure filter (where filtered water may be obtained gratuitously), the Colebrook-dale dome, and bronze statues of the eagle slayer, &c.; Ross's monster telescope; artificial stone fountain, and other objects of interest. The last object of interest in this avenue is the model of Liverpool, on the scale of eight feet to the mile, which brings us to the west end of the building, against the walls of which will be found many deserving objects of decorative art.

If desired, the objects placed outside the building—consisting of thirty feet high granite column, two obelisks of granate, an enormous column of coal from Bangor, &c.,&c.—may now be conveniently examined.

Returning to the interior by the same door, it will be most appropriate to progress by the southern wall, against which many very remarkable specimens of wall-decoration will be found; as well as a series of ornamental woods, elephants' tusks, and examples of ivory; together with the many interesting matters comprised in the departments of mining and metallurgy, including coals, stones, silver, tin, copper, iron, and lead ores; the Durham monument, a wine cooler, and a temple in Cannel coal; models of iron districts, iron works, coal mines, &c. Turning to the left, and passing by, for the present, the agricultural implements, we proceed at once into the department comprehending iron manufacture, hardware, &c. After examining the numerous examples of cast iron ranges, stoves, &c. occupying the eastern end of this division, we pass into the section usually indicated as the Mediæval Court, in which are many beautiful illustrations of church decoration and house furniture in the mediæval style. Coming into the adjoining bay westward, the peculiarities of metal manufacture at once indicate that we stand in the representative section of Birmingham. Here and in the adjacent Sheffield compartment are placed many beautiful examples of polished steel grates, with gold, and ormolu, and porcelain decoration. The castings exhibit in many cases a far higher order of art than has hitherto been introduced into our metal manufactures. Some of the productions from Sheffield and Birmingham exhibit much that is exceedingly novel and highly tasteful, shewing that the result of the Exhibition has been already to unite art more closely with manufacture. In addition to the steel manu-

ture, a large number of articles in other metals will be nd, which from their elegance and variety excite much rest. Leaving Sheffield at the front part, facing the ntral avenue, and turning to the left, or westward, we find the same side of the avenue—

HE WOOLLEN AND MIXED FABRICS OF THE WEST-RIDING.

All the manufactures of Leeds and district, in woollen ths and mixtures, and mohairs; of Bradford, and Hudrsfield, and Halifax, in stuffs and worsteds, and fancy textiles, mous as well for their fabrics as for their dyes and designs, e here to be found enclosed, many of them, in handsome ass-cases. In the broad cloths, fine, and medium, and avy, in beavers, pilots, tweeds, mohairs, cassimeres, doeins, serges, &c., much in the Leeds department will be und worthy of unqualified admiration, and that cannot be ecelled. Ladies will, in the Bradford, Halifax, and Hudrsfield departments, see a most extensive display of merinos, laines, moreens, damasks, Paramattas, Cobourgs, alpacas, hairs, and all the intermediate varieties of mixed material, hich peculiarly belong to their department of dress and rniture; whilst gentlemen will find fancy goods for vests d other attire that cannot fail to elicit their admiration. By the way, the London shopkeepers must have felt awkward en their customers, upon examining the West-Riding damasks, merinos, and so forth, made the discovery that the at mass of fabrics which they had purchased and paid for French, were actually the produce of Bradford and Halifax. roughout the woollen and worsted department the display goods of the highest quality and most perfect texture is nly astounding. Here it is that groups of foreigners may ntinually be seen discussing the merits of a piece of cloth exampled fineness and lustre, or paying a just tribute admiration to another which none but an English loom uld have produced. Of all the achievements of British ill none seem to impress the natives of other countries ore strongly than those our textile fabrics. Justly, too, ey be studied, for here in the greatest perfection are be inspected woollen tissues of the highest quality, and of ordinary softness and brilliancy, flannels of marvellous ity, thick, inflexible pilot cloths, delicate Orleans and

Coburgs, carriage wrappers, Indian blankets, friezes, coatings of alpaca, camel's hair, mohair, Vicuna moleskins, twills, buckskins, kerseymeres, &c., &c. The Queen and Prince Albert have expressed their unqualified admiration of the West-Riding department; and I make no doubt that our West-Riding manufacturers and artizans will find their reward in a very large number of the prize medals, and a vastly increased demand for their productions.

Next to the woollen and worsted departments are the flax and hemp manufactures of Ireland and Scotland,—duck, ducks, huckabacks, and four-yard wide sheeting from Knaresbro'; and the linens of Barnsley. There are many beautiful things in the Irish department in crimson velvet, figured damask, poplins, and linen; but I was somewhat amused at the truly characteristic placards which they had introduced. Throughout the whole of this mighty exposition, nothing like a request to purchase, much less an appeal to our charity, is seen; but almost the first object which meets the eye on entering the Irish compartment, is a couple of large twin placards—"Encourage and foster the manufactures of Ireland."—"Thousands of Irishmen need employment—encourage our infant manufactures." Amongst the table linen, the display of Mr. Pegler, of Leeds, is deserving of a careful examination. We are properly introduced to the cotton printed fabrics of Manchester, London, and Glasgow, by a "sheet of waste specimens indicating the mode of arrangement of the panorama 1[illegible] feet long, illustrative of the calico printing of Manchester, consisting of geometric forms, conventional arrangements of natural forms, and miscellaneous combinations of forms derived from nature." Manchester, Glasgow, London, and other districts have contributed to tell the story of this interesting and important branch of national industry. If we now pass across the west end to the north wall, we find ourselves at once involved in a display of—

MACHINERY IN MOTION, AND STANDING.

Of which this country may justly be proud. Scarcely any portion of the Exhibition can by possibility prove more instructive than this. The processes, for example, of the cotton, woollen, worsted, flax, and silk manufacture are here most fully illustrated. Into one of these machines the

cotton in its raw condition, as obtained from the cotton plants of the old and new worlds, enters at one end; it presently becomes, by the magic action of this automatic combination of iron and brass, a fine thread; and this, gliding onward through the loom, and being crossed and re-crossed by the flying shuttle, passes out at the other end of this machinery a finished piece of calico! Here may be be seen in active operation almost every conceivable variety of machine, guided and controlled by male or female operatives from Leeds and Manchester, and other places in Yorkshire and Lancashire. Many industrial occupations are thus exemplified, and impart an immense amount of instruction and information to those who otherwise would perhaps never have had their attention directed to such operations. To my thinking, the collection of machinery in motion excites far deeper interest than anything else exhibited. We admire the genius evinced in the works of art—we look with wonder on the curious productions of skill—we delight in the costly and brilliant things which supply the wants of the rich and great, but we see in the machine, that which, by cheapening, gives countless comforts and enjoyments to the masses, who otherwise might themselves have remained mere machines, with little development of the faculties of our common nature. Besides, it is to machinery we are now indebted for this magnificent exhibition, and its stupendous edifice. Without the large application of machinery, the Crystal Palace could not have been produced, and without the application of machinery to manufactures, there would have been little worth exhibiting from any part of the world. To attempt a detailed description of the machinery in motion and standing would be quite beyond the province and power of a small pamphlet; and without stopping, therefore, to notice the machines and engines from Leeds, and Yorkshire and Lancashire, and Ireland, and elsewhere—all of which are very deserving of attention—it may be well to observe, that the flax machinery exhibited involves many modifications of much novelty. We have here machines for crushing the straw of flax, for cutting it into lengths; yarns spun and canvass manufactured. Then there are the machines for silk-weaving and the manufacture of lace—one of which, for lace-weaving and gassing lace, deserves some attention. It is only 20 years since the labour expended in the fabri-

cation of a rack of lace (a measure containing 240 meshes), cost 3s. 6d.; it now costs 1d. Prices have accordingly fallen in a proportionate degree. Formerly a 24 rack piece, five-quarters wide, fetched about £17 wholesale price; the same piece is now sold for 7s. Such is the effect of science applied to the arts, in cheapening luxuries and extending their enjoyment from the wealthy to the humble. The method formerly adopted for removing the fibres from lace, and other fine fabrics, was as follows:—An iron cylinder, whose length was equal to the width of the lace and muslin, was made red hot. The lace or muslin being stretched tight, was then made to pass in contact with this red hot iron, being pressed upon it with a certain force, and moved over it at a certain speed, the speed and pressure being so regulated that the lace remained in contact with the red-hot iron a sufficient time to burn off the superfluous fibres, but not a sufficient time to destroy or injure the delicate fabric itself. As the art of manufacturing gas was improved, and its application extended, it supplied an improved substitute for this purpose, of which the apparatus exhibited by Messrs. Burton and Earnes is an example. A row of gas-burners will be observed in the machine, the length of which corresponds with the width of the lace to be "gassed," as it is called. The lace is made to pass through this row of gas flames with a certain velocity. It is possible to give to the lace a velocity so great that the flame will not have time to destroy a single particle of the superfluous fibre; and, on the other hand, the velocity may be retarded, so as to destroy, not only the fibre, but injure or destroy the lace. By experience, a certain speed is ascertained, which will give to the gas flames the time necessary to destroy the fibre without damaging the lace. The lace, after it has passed through the gas, runs over a brush, which entirely clears it of the decomposed fibre; and a current of air, produced by working a revolving fan, blows the whole of the dust away; and all this is done in less time than it takes one to describe it. The several groups which are employed in the manufacture of cotton, woollen, linen, and silk goods, will also be regarded as remarkable exemplifications of that skill which has been, since the time of Arkwright, devoted to the improvement of our textile fabrics. Mr. Appold's centrifugal pump is now in working order, and will be a very attractive object.

By it the inventor calculates that with a wheel twenty feet in diameter, describing 53½ revolutions per minute he could discharge in that short time 560,000 gallons of water. Then there is shown in motion a new method of grinding by means of iron plates, or other grinding surfaces, both revolving, but on different centres, thus producing a peculiar rubbing motion, found to answer most efficiently. By having a complete set of plates, each one of these mills could be made to grind any substance, from splitting beans to pulverising the hardest flints. At the trial of implements, one of these mills ground successively oats, beans, linseed, barley, bones, coprolites, and flints, the required changes in the plates being effected in a few moments each time.

From an early period it was predicted that the collection would be more remarkable for the excellence of each contribution, and for its adoption of the most recent improvements, than for any striking novelty. That anticipation turns out to be well founded, and in this great branch of industry, where we are comparatively without rivals, our reputation rests mainly upon what the mechanical genius of the country has already successfully adopted. Yet there are points of interest to guide the steps of the uninitiated visitor amid that wonderful display, some of which I have attempted to point out. He may pause for a moment to examine Donnesthorpe's patent for opening cotton—a quarter of the right in which he has disposed of, it is said, for £25,000. Mather's invention for printing calico in eight colours, will attract great attention. Another important novelty is the patent exhibited by Dalton, of Manchester, for calico printing on both sides; and no little interest will be excited by the steam printing presses, the paper machines, lathes, hydraulic presses, machines for removing smut from wheat, corn mills, hat-making machine, the hydraulic press which lifted the Britannia Bridge to its place, &c., &c.

The Locomotive and Railway Section of the Exhibition—that which for years past has absorbed so large a portion of our mechanical and engineering skill—will be examined with great interest by an inquiring public. Visitors will expect to see locomotives set in order like so many prize oxen at a cattle show, with an immense heating surface, huge driving wheels, and a power of steam pressure astoundingly great. These anticipations have been realized in the

arrival of a monster engine contributed by the North-Western Railway, and the largest and most powerful ever made to run on the narrow gauge. This overgrown machine has driving wheels 8 feet in diameter, and is in point of fact a moving mountain of iron. Three other locomotives had previously taken up their position; one, a small racehorse adapted for short branch lines or light traffic, and having a tender combined with it, is exhibited by E. B. Wilson & Co. of the Leeds Railway Foundry; another, an admirable engine manufactured by Kitson & Co., of Leeds, exhibited by them; the third, made by Stephenson, on Crampton's patent, is a very interesting contribution from the important principle which that patent developes. An additional axle, without wheels, is introduced to bear the strain of the machinery, and the axle of the driving wheels is thus lightened of a portion of the work which hitherto it has had to perform, and which has rendered it so apt to give way. The only other object in the locomotive department worthy of notice is Barlow's sleeper and rail combined with continuous bearings.

From the machinery, we will pass into the carriage department, in which we find a great variety of vehicles of all descriptions; and turning east we find ourselves amongst the products of the men of leather, where are illustrations of the processes by which the skins of animals are rendered available for purposes of use and ornament. Glancing at the furs, we proceed next to the department of mineral manufactures, in which the minerals of England are worked up by British industry into forms of elegance and beauty, utility and delicacy. Immediately eastward of this division will be found the bay allotted to furniture, a similar space being devoted to it also on the other side of the central avenue, within which is included particularly metropolitan furniture. Some of this furniture, and especially that from the provinces, displays refined taste, great ability, and persevering industry and skill—the carvings, in some cases, being exceedingly beautiful and elaborate. To the east of the furniture department, on the north side, we have the section of fine arts, as far as they come within the meaning of purely industrial productions—including *papier maché*, ornamental printing, in oil and chromo-lithography, painting on ivory, engraving by electricity, &c., &c. Directly adjoining this section, before arriving at the staircase, we

we found the Malta, Jersey, and Ceylon departments, which should now be inspected.

Ascending the north stairs, and proceeding along the gallery to the right, we are brought to the ceramic series, including pottery, earthenware, porcelain, both painted and statuary, stoneware, steam-printing, for transferring prints to earthenware, and painting on glass, to which we have been brought by continuing our right-hand course. The contents of the north gallery are of a very miscellaneous character, including models of all kinds, surgical instruments, cutlery, moulding and carving by machinery, glass manufactures, musical instruments (including many piano-fortes), philosophical instruments, electric light, electrotypes, electric telegraphs, printing telegraphs, photography, daguerreotypes, &c., &c. The grand organ, forming the central object at the West-end gallery is thirty-eight feet high, twenty-six feet wide, and twenty-three deep. It contains about 5,000 pipes, the largest being thirty-two feet long, and the shortest three-eighths of an inch. It has 80 stops, of which fifteen are reeds, and fourteen appropriated to pedal organ. I was informed that Mr. Willis, the constructor, asks £20,000 for it, and has refused £19,000; but I give this merely as a rumour. Arranged behind and on either side of this instrument, are a great variety of examples of naval architecture. Passing southward by the organ, into the central south gallery, specimens of stained glass windows invite inspection. Beyond these are a great variety of philosophical instruments, as well as curious clocks, gold and silver work of enormous value, a lump of gold from California, weighing eighteen pounds three ounces, diamonds and other precious stones, made into tiaras, necklaces, bouquets, &c., &c.; Sheffield plate, gold drawing, bullion fringe.

Hanging above the central galleries will be seen a splendid display of every kind of carpet manufacture, amongst them the celebrated "Ladies' carpet," worked in Berlin wool by the Lady Mayoress and 150 ladies of Great Britain. This fine production hangs where the central north gallery meets the transept. In the central south gallery are an extraordinary variety of articles comprehended in the tapestry class—Limerick lace, knitted counterpanes and calico dresses, needlework carpets, &c., of wonderful beauty or extraordinary fineness. The south gallery wall is ornamented

with many specimens of needlework of various kinds, of which the state bed is in all respects a fine example of design and execution. Proceeding westward, we come to the chemical section, which will have purely a technical interest. Next we arrive at the food class, in which there is nothing calling for especial comment; and going onward we come into the section devoted to engineering, which includes models of fortifications, and specimens of fire-arms, swords, Scinde armour, naval architecture, &c.—not a place where members of the Peace Society will spend much time.

By descending the stairs on the north side, we come into the department devoted to agricultural implements, to which those interested in the tilling of the soil may devote some attention. The articles, valuable as many of them are, will not detain the *citizen* for any length of time. The farmer, however, who visits the Exhibition will find much to instruct him here. He will learn, in the increasing energy of the implement makers as a class, in the eagerness with which they have sought for accommodation within the Crystal Palace, in the excellence of their contributions as compared with those of any other nation in the same class, some useful lessons with reference to the past and some cheering hopes for the future. He will see the deep anxiety founded on the sound basis of trade which exists among a body of highly enterprising and intelligent manufacturers, to extend to agriculture those mechanical aids which have raised other branches of the national industry to their present colossal proportions. The public at large, too, though they may not be able to estimate the value of grubbers, scarifiers, clod crushers, pulverisers, and harrows—though able only to form a vague conception of what the vast and formidable array before them can accomplish for the farmer, will yet gather enough to convince them of the influence which the implement makers, as a body, exercise upon the cultivation of the soil, and of the firm root which they have taken in the country as a producing interest.

We pass from the eastern end of the agricultural avenue into the room devoted to the most exalted of the arts—the sculpture room. There are many exceedingly beautiful specimens of British art still retained in this apartment, although many have been removed for the purpose of decorating the transept and nave. From hence our path will be

by the north-eastern door to the colonial departments, including South Australia, Van Dieman's Land, Canada, East Indies, in which are gathered a series of illustrations from which those who have never travelled beyond our own island may learn most instructive lessons of the Antipodes and the far east.

Making our way into the transept, we will now pass down the central avenue to the eastern entrance. Exquisitely beautiful portraits of the Queen and Prince Albert, and the much-talked-of Koh-i-Noor diamond are the first objects in this avenue. By the way, most persons are astonished to find this diamond, valued at £2,000,000, no larger than a crownpiece, and secured in a gilded iron safe, something resembling a bird-cage. Beyond this, proceeding along the central avenue eastward, we arrive at some French statuary, the most remarkable being, perhaps, Cain and his family after the murder of Abel. These are followed by some fine bronze castings, from France, and the Parisian organ, which is a prominent feature in the nave. Satan overthrown by an angel is a fine colossal work; and the still more colossal equestrian statue of Godfrey de Bouillon, by Eugene Simonis, is a striking work of art. Bouillon's face is finely expressive of heroic devotion, while the banner which he bears adds much to the picturesque effect of the whole. I cannot help thinking that this statue might be seen to greater advantage in the open air on account of its great magnitude, and advise all those who desire to obtain the best view of it to recede as far as possible into one of the side courts. Sculptors differ much in the points which an "heroic" horse should have, and it is remarkable that none of the horses in the Great Exhibition bear any resemblance to each other; perhaps our great bard's opinion may be found not unworthy their consideration; his beau ideal of a horse was—

> "Round-hoof'd, short-jointed, feltock shag and long,
> Broad breast, full eyes, small head, and nostril wide;
> High crest, short ear, straight legs, and passing strong,
> Thin mane, thick tail, broad buttock, tender hide."

I confess I think that Simonis' horse comes nearer to perfection than any in the Exhibition, as regards the fine old Norman breed; and I know not when I have seen so "proud a rider on so proud a back."

The same sculptor exhibits near this two other statues, one of a child with a toy, and the other a chubby little fellow of two years, who having thrust his drumstick through his drumhead, is driving his knuckle into his eyes, and roaring lustily. This is a perfect gem. The statue of Achilles, withdrawing the arrow from his heel, the painted window, and the group of Mazeppa, are admirable specimens of Austrian art both in painting and sculpture.

Hereabouts also are some contributions from Rome, including marble statues and groups—as Cupid and Psyche, Flora, Armido and Rinaldo, Venus, &c., &c. We have now arrived at one of the most prominent, and to my mind the most beautiful and extraordinary objects in the central avenue, namely, the colossal group, by Kiss, of Berlin, cast in zinc, and bronzed over in a peculiar manner, of an Amazon, whose horse is attacked by a tiger. This, I should unhesitatingly pronounce to be one of the noblest groups in modern art, and will bear comparison with some of the best works of Grecian antiquity. Each figure is instinct with life and motion. The terrible force with which the tiger has pounced upon his victim is evinced in every muscle of the animal, and the corrugations of the upper part of its face show that its fangs are deeply buried in the vitals of the writhing steed. The face of the Amazon is replete with powerful expression, and her attitude most energetic and appropriate without detracting from her beauty or elegance of form. The horse is wonderfully spirited, the starting eyeball, the dilated nostril, the bent and raised fore-leg, the swollen veins, the sinking hinder quarters, betoken his intense and helpless agony. The group is unrivalled in its kind by anything in the Exhibition. Next we arrive at the statues of Libusa and Georgius, from Ninevah, and the colossal Lion from the same city. The lion is in every way striking as a work of art, and no less so as an example of metal casting. As it now stands, so it was taken from the mould—no file or other tool having ever touched the metal since its construction. The perfection of every part is extraordinary. In the Stutgardt Horses, we have two groups alike beautiful in execution as picturesque and poetical in conception. Every one who looks upon them, and marks the expression of the eye and feature of the foremost horse, will be forcibly reminded of Byron's lines—

"In truth he was a noble steed,
A Tartar of the Ukraine breed,
Who looked as though the speed of thought
Were in his limbs; but he was wild,
Wild as the wild deer, and untaught;
With spur and bridle undefiled.
'Twas but a day he had been caught;
And snorting, with erected mane,
And struggling fiercely, but in vain,
In the fell foam of wrath and dread,
To me the desert-born was led."

Look on this picture; and—on this." Mark the eye of the second horse—or rather the same horse in the second position—and you will at once see that the struggle is over—man has completed his ascendency—the wild steed of the desert has become the subdued servant of humanity. The church bell from Saxony, an American bridge, and one or two other matters, bring us to the east end of the central avenue.

The extreme east end of the building is occupied by the contributions from the UNITED STATES. On the northern side of the nave they have arranged their machinery. Among the more striking objects exhibited by the Americans are an Indian-rubber life-boat, small enough to be put into a coat pocket, some excellent piano-fortes, samples of cotton, ice-producing machine, and some highly interesting samples of the raw materials and produce of this young country. In the gallery at the east end and the south gallery, are the manufactures of the United States,—woven fabrics, as cottons, flannel, blankets, woollens, &c., &c.

Immediately west of the United States, the productions of the RUSSIAN EMPIRE find a place. These are not large, a considerable quantity being as yet unable to reach England, owing to the ice. There are, however, some beautiful articles including a magnificent cabinet and some porcelain vases, which with looking glasses and furniture, constitute the principal examples of Russian industry at present exhibited.

DENMARK occupies a small space, but it is well filled with many things of much interest. A machine for composing and distributing types, which will act with much precision and rapidity, is the best invention of the kind ever brought out.

NORWAY and SWEDEN come next, the great mass of articles exhibited consisting of illustrations of metal manufacture; but there is a beautiful marble statue of a shepherd

boy, and some interesting specimens of hand-loom weaving by the peasantry, in cottons, woollen cloths, silks, &c.

The GERMAN ZOLLVEREIN contributions are of a very tasteful and important description, and are well displayed. The more attractive portion will no doubt be the stained glass, the furniture, the curious toys, the carving in ivory, the pottery and porcelain, the iron and other castings, the bronzes, the papier maché, the jewellery, and so forth; but that to which all persons connected with the clothing districts of the West Riding should direct especial attention, is the really fine display of woollen, worsted, cotton, and linen fabrics, and the specimens of dyed goods. These textile manufactures are on the south side—the papier machè, jewellery, stuffed birds, and other ornamental wares, are on the north side. The States of the Zollverein are altogether very large exhibitors.

HOLLAND presents a diversified and interesting display of manufactures, works of art, &c., which will well repay a visit.

The AUSTRIAN exhibition is of a very remarkable character—especially in the porcelain and glass articles, the paintings on wood, paper, and canvass, and the suite of rooms representing the interior of a palatial residence, and consisting of a sitting-room, dining-room, library, and bed-room. These rooms are visited with eagerness and surveyed with admiration. The furniture and ornaments are alike tasteful and elegant. Then there is the system of printing in oil, whereby a £25 oil-painting can be copied for a shilling so correctly that you cannot tell which is the original; and the painting on porcelain is exquisite. The works of art exhibited in the Austrian department come almost entirely from Milan, and the credit of them therefore belongs to Italy rather than Austria. It does affect the mind with some painful emotions, and some regret for a country to which Europe owes so much, to see her genius in art, which is her chief glory, thus appropriated with her territory by conquest. No one can enter the sculpture-room, and see the extraordinary merit of some of the works which it contains, without a sorrowful feeling and some sense of injustice. There is in the collection a figure of Ishmael in marble, which will, I am confident, be pronounced a master-piece of art. The expression of exhaustion on the face of the boy, the attenuation of his frame, and the languid, powerless character imparted to his limbs by the manner in which they are disposed, all speak their own

story. There are several other works of great merit, especially that of the "Veiled Vestal," a piece of sculpture which has sorely puzzled all who have first looked upon it. It represents a nun closely veiled, the veil being held down by one hand. The impression of all, when the figure is first looked at, is, that the veil is transparent, and that the face can be seen through it. Upon a more minute examination, however, the discovery is made that there has been an optical illusion experienced. By the drawing down of the veil tightly over the face, the more prominent features—the nose, cheeks, brows, forehead, chin, and mouth,—are displayed through the veil; in other words, the veil *fits them*, and shows their form and shape. Well, these prominent features, are chiselled out, as they should be, and the result is, that though many portions of the face are not touched by the veil or the chisel, the eye unconsciously fills up the outline, presents to the mind a perfect picture where there is only a very imperfect outline, and the optical illusion is complete. There are three or four veiled figures in this room, as well as a head of Christ, the most magnificent production of the chisel I ever met with. But here, as in the Zollverein department, the West-Riding visitor must not fail to make a careful tour and take a scrutinizing survey of the textile products of Austria: their own interest demands it of them.

Belgium comes next, and though not large, it is a display which deserves close attention, in furniture, in machinery, in wood carving, in sculpture; and, though last, not least, in woven articles, particularly broad cloth, which will be found extremely fine examples of the productions of the Belgium looms.

The French display possesses an importance which cannot be described in this hasty run through it. It is in every way creditable to that great nation, and must be viewed with admiration. Her tapestry and carpets are unrivalled, and occupy an apartment against the north wall; whilst on the south side of the nave, the delicate work in hair, silvered glass, bijouterie in all its forms, constitute a very interesting feature to all admirers of articles of taste and virtu. The silks of Lyons, woollen and cotton goods, lace, and numerous other examples of the looms of France, are of great import. The larger collection of these will be found in the Central South Gallery.

Italy shines in her arts, and presents in her sculpture,

her furniture, her wood carving, her silver filagree, her silks and velvets,—a display that will prove irresistible.

The most remarkable contribution from SPAIN appears to be the custodia, a piece of altar furniture. made in Spain for the cathedral of Lima, of gold and precious stones, valued at £28,000. The exhibition of Spanish and Portuguese articles, however, presents many points of interest.

SWITZERLAND, with her woven materials, clocks, and watches, invites our attention next.

EGYPT, GREECE, TURKEY, PERSIA, and ARABIA, with their varied stores, bring us to the end of the transept on the north side of the east nave, whilst on the southern side, CHINA, TUNIS, and BRAZIL, with the galleries over them, bring us to the electric clock, over the centre of the south transept entrance, and to the end of our very imperfect labour.

Such is the route I would sketch to those who go provided with means, and with plenty of time at their disposal; but if the OPERATIVE ask me what course he should steer with his three or four clear days, I would say—If you are interested in the CLOTHING TRADE of the West-Riding, enter at the East end—the first you arrive at from Piccadilly, the Marble Arch or Albert Gate; and examining the magnificent objects ranged along the Central Avenue, go straight down to the West Riding department, and thence to the woollens, worsteds, and cottons of France, and Belgium, and Austria, and the Zollverein. That will be a good day's work. On the second day follow, as far as you can, the instructions above given, rapidly passing over that which is the least interesting; but on no account neglect the machinery in motion, and don't dream of spending less than three whole days in the Exhibition.

If you are a MECHANIC, still go in at the Eastern entrance and pass down to the Western door, when you will turn to your right, and enter the machinery departments at once, and by keeping in the back part of the north side, you may proceed almost the entire length of the building amongst machinery from the British at the west end to the United States at the extreme east. When you have seen the machinery proceed to the textile fabrics of England and foreign countries. You will consume fully two days in doing what I have pointed out; and the third and fourth had better be devoted to the examination of the rest of the building in the way I have indicated—avoiding such as may be to you of little or no interest.

So much for the Exhibition; but as Yorkshiremen we

desire to make themselves acquainted with all they can in this mighty metropolis, during their stay, I have arranged for them a few plain instructions as to—

LONDON SIGHTS—WHAT TO SEE, AND HOW TO SEE THEM.

When in London the working classes should not fritter away their time and money in seeing panoramas and shows, and paltry theatres, and other matters which they may at some future time be able to witness out of London. The working man who goes up for—say five or six days—must not think of spending *less* than three—it should be *four* days—in the Exhibition, and any spare time he may have will be best expended in seeing that which cannot be seen out of the metropolis. One thing I would particularly impress upon working men is, that *the best sights in London are free.* I will tell you what those are which I would particularly advise you to visit. First, the British Museum, Great Russell-street, Bloomsbury, which will be open *free* daily until the 1st of September, and after the 7th; next, the National Gallery, Trafalgar-square, which is open on Mondays, Tuesdays, Wednesdays, and Thursdays, and will so continue until the middle of September, *free*; next, the Vernon Gallery, Marlborough House, Pall Mall, open at the same times, *free*; next, St. Paul's and Westminster Abbey, now open daily, *free*; then there are St. James's and the Green Parks, beautifully laid out, and from which admirable views may be had of Buckingham Palace, the Horse Guards, &c.; then there are the Houses of Parliament, seen admirably from the river; and if you take a threepenny ride down the river, you may visit Greenwich Hospital and Woolwich Arsenal and Rotunda, wonderful places, which every Englishman should inspect with care; but if you prefer staying in town, there are the docks—the East and West India docks, for example, at Limehouse and Blackwall, with a water area of 112 acres. These are open daily, and tickets of admission may be obtained for the East India docks, at No. 11, St. Helen's Place; for the West India docks, at No. 8, Billeter-street. Besides these places, there are Covent Garden market, with its fine conservatory on the roof; Billingsgate for fish; the ancient Guildhall, the Bank, the Post-office, &c. If you feel disposed to see the elephant calf, and the hippopotamus, you must go to the Regent's Park Gardens; but for an evening's amusement, perhaps the best is that to be obtained at the Surrey Zoological Gardens, with the collection of animals, the fireworks, the Temple of Janus, and the fine bands of music. As to the theatres, I hardly know whether I can give any advice; so much depends upon taste in these matters, that I will leave the choice to you, merely remarking that, with the exception of Her Majesty's, Drury-lane, Covent Garden, the Haymarket, the Adelphi, and the Surrey, they are generally small places.

Assuming that you will, as I have suggested, spend the four first days in the Exhibition, it will be necessary that I should point out the best mode of enjoying your evenings after tea— that is, after the Exhibition has closed for the day.

First Evening.—Upon leaving the Exhibition and proceeding through the Green Park, past Buckingham Palace, through St. James's Park to the Horse Guards (to the left of which stands the Admiralty and opposite to it Whitehall) and thence to Westminster Bridge, you will by keeping almost a straight line arrive at the *Surrey Zoological Gardens.* Here there is a fine collection of animals, which are fed at five o'clock. At six commence the promenade concerts, followed by splendid Panoramic Views of the Temple of Janus, &c., and concluding at dusk with a grand display of fireworks.—Admission one shilling, the cheapest amusement in London.

Second Evening.—Proceeding by the same route from the Exhibition and Parks, take Vauxhall Bridge to the celebrated Vauxhall Gardens, where there is a succession of concerts, danses, panoramic views, equestrian, theatrical representations, illuminations, and fireworks.—Admission, two shillings and sixpence; but towards the close of the season, one shilling.

Third Evening.—Madame Tussaud's, Baker-street, the readiest way to which is across Hyde Park into Oxford-street, on the left-hand side of which is Baker-street.—Admission, one shilling. Before going into Madame Tussaud's, however, it would be well to call at the Baker-street Bazaar.—Admission *free.*

Fourth Evening.—By taking Steamer at any of the Bridges, you may be carried to the *Cremorne Gardens, Chelsea.* These grounds are well worth a visit—the amusements being similar to those of Vauxhall, with the addition of balloon ascents and occasional aquatic tournaments. The admission is one shilling; but it entitles you to sixpennyworth of refreshments. If you think you have had enough of gardens, go to the *Colosseum, Regent's Park,* the admission to which is two shillings.

Fifth Day.—You will now enjoy the change from indoor city sights to a trip on the river. First, take steam to Woolwich from any of the Bridges. Arrived there, proceed to the Arsenal, where the warlike stores and accoutrements of the kingdom are deposited. Thence go the Rotunda, where you will find models of the principal fortifications of the world, models of the artillery corps of the European nations, of shipping, warlike trophies, ancient armour, &c. Admission is free to both these places. Busses continually run from Woolwich to Greenwich—that is, towards London; and by taking one of these you may soon arrive at Greenwich Hospital. My object in advising you to go to Woolwich first is, that the Hospital is open later than the Arsenal or Rotunda. The admission to the Painted Hall, Greenwich Hospital, is threepence. Take steamer again from Greenwich to the Thames Tunnel Pier, and descend beneath the bed of the Thames.—This Tunnel is the most extraordinary work of the kind in the World. The admission to it is one penny.

Sixth Day.—Again resuming your London rambles, proceed to St. Paul's, open gratuitously at ten o'clock; thence along Cheapside to the Guildhall, King-street; to the Mansion House, at the end of Cheapside; to the Royal Exchange and Bank of England, opposite; thence down King William-street to the Monument and London

bridge; and thence up Thames-street to the Coal Exchange. All of these are *free*. Next proceed to the Tower, open till four, at one shilling. Here are the armoury, the ancient towers and barracks, and the regalia. Beyond this, down the river, lie the docks, the mode of gaining admission to which I have already described.

Seventh Day.—First proceed to the British Museum, New Oxford-street, which is open at ten o'clock. Having spent some hours in this vast edifice, proceed to the National Gallery, Trafalgar-square, open till six, on the days I have already mentioned; and finish up at the Vernon Gallery, Marlborough House, very near to the National Gallery. The admission to all these is *free*.

Eighth Day.—Take steamer from any of the bridges to Hampton Court Palace; in returning visit Kew Gardens; and if you have time call at Chelsea Hospital; but don't miss Hampton Court Palace. All these places are *free*, and the ride by the steamer is beautiful—the scenery being really magnificent.

It will be observed that I have omitted Westminster Abbey and all the theatres, as well as many objects of minor interest, which the visitor will see in passing to and fro. In arranging the foregoing places, I have endeavoured to classify them in such a way as shall enable the visitor to see the greatest number of the most important with the smallest possible expenditure of time and trouble. If the visitor should not have so many as eight clear days in London, he will exercise his own judgment in selecting those objects which are most valuable, and omitting the others.

Should the great bulk of the visitors be (as I presume they will be) strangers to London, it is well I should state that a small penny map of London, published by Vickers, of Holywell-street, Strand, and which is sold by Mr. Buckton, 50, Briggate, Leeds, and other booksellers, will prove an invaluable pocket companion and guide in their perambulations about the Metropolis.

THE END

J. Buckton, Printer and Publisher, 50, Briggate, Leeds.